

REMARKS

In response to the Final Office Action mailed February 2, 2001, Applicants respectfully request reconsideration. To further the prosecution of this application, Applicants request the above amendments to the claims. The amendments do not raise any new issue of patentability, and the claims as presented are believed to be in condition for allowance.

I. Examiner Interview

Initially, Applicants wish to thank Examiner Vital for his courtesy in granting and conducting a telephone interview to discuss the Final Office Action. During the interview, claim 1 was discussed, and an amendment of claim 1 was proposed by the Examiner to place Claim 1 in condition for allowance. Claim 1 has been amended in accordance with the Examiner's suggestion.

II. Objections to Oath/Declaration

In the Final Office Action, the oath or declaration was objected to for not identifying the post office address of each inventor. Applicants understand that the Examiner has discussed this objection with Supervisory Patent Examiner Kim, and that the rejection would be withdrawn. Applicants are grateful for the courtesies extended by Examiners Vital and Kim in further considering this issue.

III. Rejections Under §102(e)

In ¶6 of the Final Office Action, claims 1-25 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,052,341 (Bingham).

Claim 1

Claim 1 was rejected under 35 U.S.C. §102(e) as being anticipated by Bingham. Claim 1 has been amended to more clearly distinguish over Bingham, in accordance with the Examiner's proposed suggestion. Specifically, claim 1 now recites "a switched network coupled to the

plurality of primary storage devices and to the secondary storage device to permit one of the primary storage devices to access the secondary storage device through the switched network”.

As discussed in the Amendment filed on November 30, 2000, the Bingham patent discloses a device element allocation manager to connect a multi-library system with multiple hosts (abstract). As indicated with respect to Figure 3, the disclosed system may include two hosts 310, 312 that are directly connected to switches (labeled SW in Fig. 3). These switches are used to connect the host computers 310, 312 to drives 320, 322, 324, 326 (Col. 6, lines 43-46). The drives may mount and dismount tapes 342 contained in libraries or bins (Col. 6, lines 49-59). The application refers to such tapes as “data storage media” located in the “bins” 342. (Col. 4, lines 51-61).

At the interview, the Examiner suggested that the tape drives are primary storage units connected to the network and that the bins are a secondary storage device connected to the network (indirectly, through the drives). Applicant’s do not read claim 1 as filed this broadly – the claim required that both be connected to the network which in the context of the specification would require that communication could take place between them over the network. Consequently, the amendment requested above is not believed to narrow the claim, it only more clearly recites the invention of claim 1 as filed.

The amendment does, however, plainly obviate the rejection. Since the switches, relied on by the Examiner as representing the claimed “switched network” of claim 1, are used to connect the host computers 310, 312 to the drives 320, 322, 324, 326, Bingham clearly does not teach or suggest a switched network coupled to the plurality of primary storage devices and to the secondary storage device to permit one of the primary storage devices to access the secondary storage device through the switched network. Rather, Bingham suggests the use of a “robotic device” as an “accessor” to permit the drives to be loaded with the data storage media (Col. 4, line 62 – Col. 5, line 6; Col. 6, lines 15-16). Accordingly, even if the drives alone were considered to be “primary storage devices”, which Applicants have already submitted is improper, those drives are not coupled to any secondary storage device (e.g., the bins, as set forth in the Office Action) by a switched network. As a result, Bingham cannot anticipate claim 1 and Applicants respectfully request that the rejection be withdrawn.

Claims 2-10 depend from claim 1 and are believed to be in condition for allowance for at least the same reasons.

Claim 11

Claim 11 was rejected under 35 U.S.C. §102(e) as being anticipated by Bingham, and has been amended to more clearly distinguish over Bingham. Specifically, claim 11 now recites “a plurality of primary storage devices to receive and store data in the devices, each primary storage device being associated with at least one of the host computers, and a secondary storage device to receive and store data in the device, coupled to a plurality of the primary storage devices, the secondary storage device being configured to receive backup data from each of the host computers”.

As discussed in the Amendment filed on November 30, 2000, the previous Office Action refers to “a set of drives for transferring data between the set of hosts and data storage media” as the “primary storage devices” recited in the claims. Presumably, the “primary storage devices” identified in the Office Action are intended to be the drives 320, 322, 324, 326 in Bingham (Fig. 3). Considered alone, these drives cannot be considered “storage devices” according to claim 11, because storage media for storing of data received by the drives is not contained within the drives themselves – that media is in the tape bins. Thus, storage media is delivered by the accessor from the storage slots to the drives for the reading or writing of data from the media. The accessed storage media is returned to the storage slots when the reading or writing of data is complete (Col. 4, line 64 – Col. 5, line 6). Similarly, the tape bins alone (i.e., without tape drives) are not secondary storage devices – they do not receive and store data on their own. The drives with the tape bins (located in a single housing, or connected in some other fashion) could be viewed as either the primary storage device or the secondary storage device of the claim – the drive/tape combination cannot, however, be both the primary and secondary storage device at the same time.

Because the tape drive and tape bin combination cannot be “a primary storage devices to receive and store data in the devices” and at the same time also be “a secondary storage device”, as recited in claim 11, Bingham cannot anticipate claim 11 and the rejection should be withdrawn.

The previous Office Action did not respond to the above argument concerning claim 11. Applicant's do not believe that the amendment to make clear that the storage device can actually store data narrows the claim, but nevertheless request entry of the Amendment to obviate the rejection of claim 11.

Claims 12-18 depend from claim 11 and are believed to be in condition for allowance for at least the same reasons.

Claim 19

Claim 19 was rejected under 35 U.S.C. §102(e) as being anticipated by Bingham, and has been amended to more clearly distinguish over Bingham. Specifically, claim 19 now recites "automatically establishing a first connection through a network from a first one of the primary storage elements to the secondary storage element to transfer a first logical object to the secondary storage element".

As discussed in connection with claim 1, since the switches relied on by the Examiner as representing the claimed "switched network" are used to connect the host computers 310, 312 to drives 320, 322, 324, 326, Bingham clearly does not teach or suggest automatically establishing a first connection through a network from a first one of the primary storage elements to the secondary storage element to transfer a first logical object to the secondary storage element. Rather, Bingham suggests the use of a "robotic device" as an "accessor" to permit the drives to be loaded with the data storage media (Col. 4, line 62 – Col. 5, line 6; Col. 6, lines 15-16). Accordingly, even if the drives were considered to be "primary storage devices", those drives are not coupled to any secondary storage device (e.g., the bins, as set forth in the Office Action) by a network. As a result, Bingham cannot anticipate claim 19 and the rejection should be withdrawn.

Claims 20-25 depend from claim 19 and are believed to be in condition for allowance for at least the same reasons.

Conclusion

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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MARKED UP CLAIMS

1. (Twice Amended) A computer system comprising:
 - a host domain including a host computer;
 - a storage domain, coupled to the host domain, the storage domain comprising
 - a plurality of primary storage devices;
 - a secondary storage device;
 - and a switched network coupled to the plurality of primary storage devices
 - and to the secondary storage device to permit one of the primary storage devices to access the secondary storage device through the switched network.
11. (Amended) A computer system comprising:
 - a heterogeneous plurality of host computers;
 - a plurality of primary storage devices to receive and store data in the devices,each primary storage device being associated with at least one of the host computers; and
 - a secondary storage device to receive and store data in the device, coupled to a plurality of the primary storage devices, the secondary storage device being configured to receive backup data from each of the host computers.
19. (Twice Amended) A method of transferring data from at least one of a plurality of a primary storage elements to a secondary storage element, the method comprising steps of:
 - automatically establishing a first connection through a network from a first one of the primary storage elements to the secondary storage element to transfer a first logical object to the secondary storage element; and
 - transferring the first logical object from the first one of the primary storage elements directly to the secondary storage element over the first connection.